

**--ABSTRACT OF THE DISCLOSURE**

The invention relates to a method for extracting hydrogen from a gas containing methane, especially natural gas.

Hydrocarbons contained in the gas are catalytically broken down in a reformer (4) by steam in order to form hydrogen, carbon monoxide and carbon dioxide. Catalytic conversion of the obtained carbon monoxide with steam occurs in a downstream conversion step in order to form carbon monoxide and water.

Carbon dioxide is removed from the converted gas flow (8) by gas washing (7), and the washed hydrogen-rich gas flow (10) is subsequently divided in a pressure-swing adsorption system (11) into a product gas flow (12) made of hydrogen and a waste gas flow (13). The waste gas flow (13) is introduced with hydrogen (14), which is separated from the gas flow (10) after gas washing, into a reformer (4) which is essentially a carbon-free combustible gas, and is combusted there. The invention also relates to a system for carrying out the method.--